

AMENDMENTS TO THE CLAIMS:

Claims 1-17 were pending at the time of the Office Action.

Claims 1, 2, 4, 5, and 8-10 are amended.

Claims 3, 7, and 15 are canceled.

New claims 27-29 are added.

Claims 1-2, 4-6, 8-14, 16-17, and 27-29 remain pending.

1. (Presently Amended). A system for lapping a surface, the system comprising:
 - a robotic arm; and
 - a pneumatic end effector unit, wherein the pneumatic end effector unit comprises:
 - a first base attached to the robotic arm;
 - a second base;
 - a lapping pad attachable to the second base;
 - a bumper coupled to the lapping pad; and
 - a pneumatic piston system coupled between the first and second bases.
2. (Presently Amended). The system of Claim 1, wherein the lapping pad comprises
~~pneumatic end effector unit comprises:~~
 - ~~a first member coupled to the robotic arm;~~
 - an abrasive member adapted to engage the surface; and
 - ~~a flexible coupling member coupled between the first member and the abrasive~~
~~member.~~
3. (Canceled).

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4. (Presently Amended). The system of Claim 1 3, further comprising:
 - an abrasive pad; and
 - a pitch for attaching the abrasive pad to the lapping pad.
5. (Presently Amended). The system of Claim 1 3, wherein the pneumatic piston system comprises:
 - a piston chamber;
 - a piston being slideably received within the piston chamber; and
 - a component for controlling air pressure within the piston chamber.
6. (Original). The system of Claim 5, wherein the piston chamber is configured to guide the second base.
7. (Canceled).
8. (Presently Amended). The system of Claim 1 3, wherein the second base comprises a latch for attaching the lapping pad to the second base.
9. (Presently Amended). The system of Claim 1 3, further comprising a slurry system coupled to one of the second base or the lapping pad for introducing a slurry compound.
10. (Presently Amended). A lapping end effector, comprising:
 - a first base attachable to a ~~attached to the~~ robotic arm;
 - a second base;
 - a lapping pad attachable to the second base;
 - a bumper coupled to the lapping pad; and
 - a pneumatic piston system coupled between the first and second bases.
11. (Original). The end effector of Claim 10, further comprising:
 - a flexible coupling member coupled between the first base and the second base.

12. (Original). The end effector of Claim 10, further comprising:
an abrasive pad; and
a pitch for attaching the abrasive pad to the lapping pad.
13. (Original). The end effector of Claim 10, wherein the pneumatic piston system comprises:
a piston chamber;
a piston being slideably received within the piston chamber; and
a component for controlling air pressure within the piston chamber.
14. (Original). The end effector of Claim 13, wherein the piston chamber is configured to guide the second base.
15. (Canceled).
16. (Original). The end effector of Claim 10, wherein the second base comprises a latch for attaching the lapping pad to the second base.
17. (Original). The end effector of Claim 10, further comprising a slurry system coupled to one of the second base or the lapping pad for introducing a slurry compound.
18. (Previously Withdrawn). A method for lapping a surface, the method comprising:
moveably applying an abrasive member to the surface; and
pneumatically controlling a pressure applied by the abrasive member to the surface.
19. (Previously Withdrawn). The method of Claim 18, wherein moveably applying an abrasive member to the surface includes flexing a flexible coupling member such that the abrasive member at least partially conforms to the surface.
20. (Previously Withdrawn). The method of Claim 18, wherein moveably applying an abrasive member to the surface includes flexing a semi-rigid coupling member such that the abrasive member at least partially conforms to the surface.

21. (Previously Withdrawn). The method of Claim 18, wherein moveably applying an abrasive member to the surface includes flexing a flexible, substantially cylindrical coupling member disposed between a support member and the abrasive member.

22. (Previously Withdrawn). The method of Claim 18, wherein moveably applying an abrasive member to the surface includes rotatably applying an abrasive member to the surface using a robotic arm.

23. (Previously Withdrawn). The method of Claim 18, wherein pneumatically controlling a pressure applied by the abrasive member to the surface includes controlling a pressure within a cylinder operatively coupled between a support member and the abrasive member.

24. (Previously Withdrawn). The method of Claim 18, wherein pneumatically controlling a pressure applied by the abrasive member to the surface includes controlling a pressure using an air logic controller.

25. (Previously Withdrawn). The method of Claim 18, wherein pneumatically controlling a pressure applied by the abrasive member to the surface includes maintaining a constant pressure applied by the abrasive member.

26. (Previously Withdrawn). The method of Claim 18, further comprising applying an abrasive slurry to the surface at least proximate the abrasive member.

27. (New). A lapping end effector for performing an operation on a surface of a workpiece, comprising:

- a first base attachable to a robotic arm;

- a second base;

- a lapping pad attached to the second base; and

- a flexible coupling system coupled between the first and second bases, the flexible coupling system configured to flex to allow the lapping pad to at least partially conform to the surface of the workpiece such that an axis of rotation of the lapping pad is non-normal to the surface during performance of the operation.

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28. (New). The end effector of Claim 27, wherein the flexible coupling system includes a pneumatic piston system comprising:

- a piston chamber;
- a piston being slideably received within the piston chamber; and
- a component for controlling air pressure within the piston chamber.

29. (New). The end effector of Claim 27, wherein the second base comprises a latch for attaching the lapping pad to the second base.

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